U.S. National Stage Appl.
Based on PCT/EP03/04087
Preliminary Amendment

Amendments to the Claims:

This listing of claims will replace all prior listings of claims. Please enter the Article 34 claim amendments made during International Preliminary Examination. Please amend Claims 1-9 and 11-14 as follows:

Listing of Claims:

1. (Currently Amended) A device for minimally invasive, intravascular aortic valve extraction inside the aorta with a perfusion catheter [[(1)]] having at least one perfusion channel designed as a hollow channel and at least two dilation units 2,3 disposed at a distance from each other at the distal catheter region in the longitudinal extension of said catheter, both said dilation units being projected through by said perfusion catheter [[(1)]] and forming in an inflated state an at least practically fluid-tight occlusion with the aortic wall [[(A)]],

wherein at least said dilation unit [[(2)]] disposed on the proximal side is provided with at least one passage through which at least one auxiliary catheter can be introduced for aortic valve ablation in a fluid-tight manner and which in said at least one passage (A_1,A_2) is provided with a sluice mechanism by means of which said passage is sealed fluid-tight in an inflated state without the provision of an auxiliary catheter.

2. (Currently Amended) The device according to claim 1, wherein said dilation units [[(2,3)]] are balloon elements which are inflatable with a medium and are disposed at a distance of at least 1 cm from each other in the longitudinal extension of said catheter.

3. (Currently Amended) The device according to claim 1 [[or 2]], wherein said at least one passage is provided at the circumferential edge of said dilation unit [[(2)]] disposed on the proximal side, when said dilation unit [[(2)]] is in an inflated state, said at least one passage being bound sickle-like by said circumferential edge of said dilation unit [[(2)]] and the remaining part by said aortic wall.

4. (Currently Amended) The device according to ~~one of the claims 1 to 3~~ claim 1, wherein said at least one passage projects through said dilation unit [[(2)]] disposed on the proximal side and is completely surrounded by said dilation unit [[(2)]].

5. (Currently Amended) The device according to ~~one of the claims 1 to 4~~ claim 1, wherein said at least one passage is designed in the manner of a ring-shaped sluice [[(R)]] which is surrounded, on the one hand, by said perfusion catheter [[(1)]] and, on the other hand, by said dilation unit [[(2)]] disposed on the proximal side.

6. (Currently Amended) The device according to ~~one of the claims 1 to 5~~ claim 1, wherein at least said dilation unit [[(2)]] disposed on the proximal side is disposed in a rotary moveable manner about said perfusion catheter [[(1)]].

7. (Currently Amended) The device according to ~~one of the claims 1 to 6~~ claim 1, wherein inside said perfusion channel of said perfusion catheter [[(1)]] a pump device is provided and

wherein on the proximal side to said dilation unit [[(2)]] disposed on the distal side an opening [[(6)]] is provided through which a blood flow enters said perfusion catheter [[(1)]] and exits said perfusion catheter [[(1)]] on the proximal side at an opening [[(7)]].

8. (Currently Amended) The device according to ~~one of the claims 1 to 7~~ claim 1, wherein said dilation unit [[(2)]] disposed on the proximal side is provided with two passages for fluid-tight introduction of a coronary perfusion catheter [[©]] provided at the circumferential edge each with a dilatable cuff [[(C')]],

wherein at least three further passages [[(A_1,A_2,I,O)]] are provided in said dilation unit [[(2)]] disposed on the proximal side, of said three further passages [[(A_1,A_2,I,O)]] one serves for introducing an ablation instrument [[(10)]], another for introducing an observation and/or rinsing unit and a third one for introducing a drainage.

9. (Currently Amended) The device according to ~~one of the claims 1 to 8~~ claim 1, wherein said perfusion catheter [[(1)]] is provided with a working channel [[(8)]] having an outlet opening [[(9)]] in the region between the two dilation units through which at least one auxiliary catheter can be introduced for aortic valve ablation.

10. (Original) The device according to claim 9, wherein said passage is surrounded by an elastic channel wall whose opposite channel wall regions lie close together fluid-tight in an inflated state.

11. (Currently Amended) The device according to ~~one of the claims 1 to 10~~ claim 1, wherein said dilation units [[(2,3)]] are connected each to a supply line through which a medium is introduced for inflating.

12. (Currently Amended) The device according to ~~one of the claims 1 to 11~~, claim 1, wherein said dilation units [[(2,3)]] are designed as suction elements which can

be inflated with a medium and which have a bell-shaped form into whose semi-open bell interior [[(13)]] a suction line [[(14)]] runs.

13. (Currently Amended) The device according to claim 12,
wherein said bell-shaped form of said suction elements is made of an elastic material which is designed double-walled and encloses an inflatable volume [[(12)]].

14. (Currently Amended) A method for minimal-invasive, intravascular aortic valve extraction inside the human aorta ~~characterized by the following process steps~~ comprising:

[[-]] introducing a coronary artery perfusion catheter into the right coronary artery and another perfusion catheter into the left coronary artery and inflating a cuff provided at each coronary artery perfusion catheter respectively, with a blood flow being ensured through said coronary artery perfusion catheters into the coronary arteries,

[[-]] intravascular introducing a perfusion catheter which is provided near its distal end with two dilation units disposed at a distance from each other,

[[-]] positioning said perfusion catheter inside the aorta in such a manner that the aortic valve is surrounded on both sides inside the aorta by said dilation units,

[[-]] inflating both of said dilation units in such a manner that said dilation units lie close to the aortic wall in a fluid-tight manner,

[[-]] emptying the blood volume inside said two dilation units by means of introducing at least one auxiliary catheter projecting through said dilation unit disposed on the proximal side to create a working volume, and

[[-]] separating the aortic valve inside said working volume by means of introducing at least one separation instrument projecting through said dilation unit disposed on the proximal side.

15. (Original) A method according to claim 14, wherein said separation of the aortic valve is conducted under optical observation by means of an optic catheter whose distal end projects into said working volume.